Early Detection Research Network

Cancer Biomarkers Group
Division of Cancer Prevention

EDRN Ontology

Ontology Development Team

February 4, 2009

Topics

- Purpose
- Scope
- Current Status
- Next steps and action

Early Detection Research Network

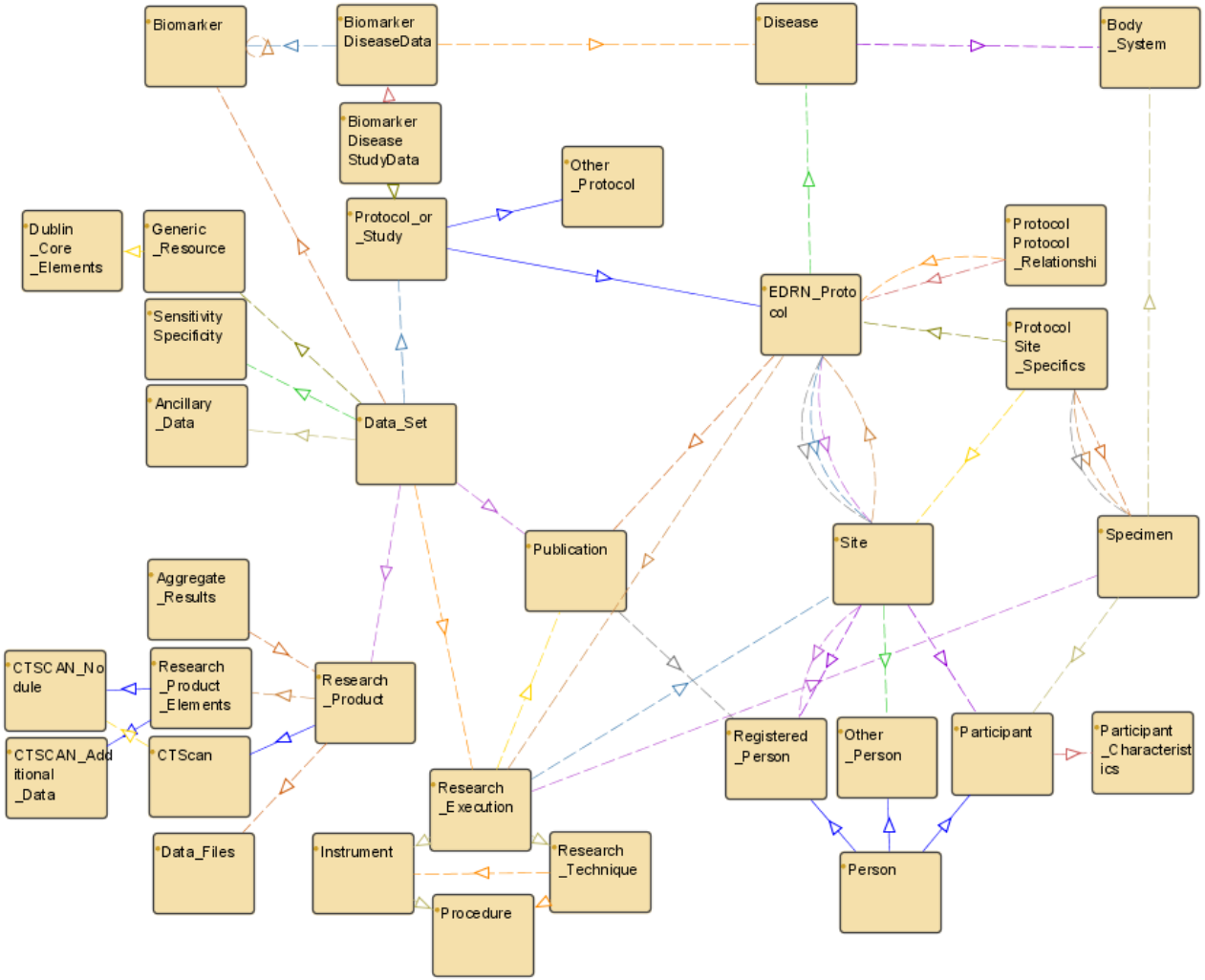
Purpose

- **The EDRN Ontology is a shared ontology for the EDRN Knowledge Environment (EKE)**
  - It is a reference model for the ***things*** in the EKE domain.
  - Used to generate specifications for developers
  - Used to generate EDRN data models
    - RDFS/XML Schema
    - RDF template files
    - Relational Schema

Scope

- **EDRN subsystems**
  - Specimen Information (ERNE)
  - Study/Protocol Information (VSIMs, eSIS)
  - BioMarker Information (BioMarker DB)
  - Science Data Set/Product Attributes (ECAS)
  - Participant DB
  - Protocol DB
- **Specific Science Data Models**
  - For ingested science data
- **CDEs/DEs**

EDRN Ontology Diagram

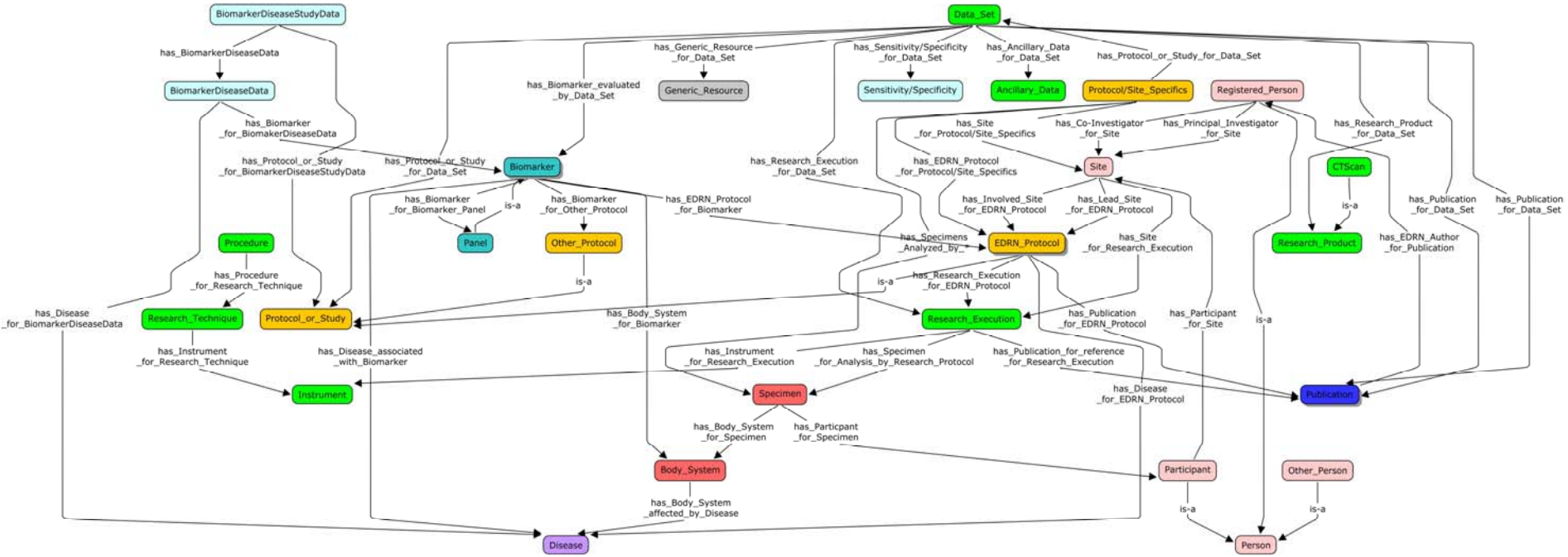


The EDRN Ontology

Current Status

- **Governance process**
  - Submitted EDRN Ontology Version 1.0 for placement into the EDRN configuration management system – Sept ‘08

EDRN Concept Map



The EDRN Ontology

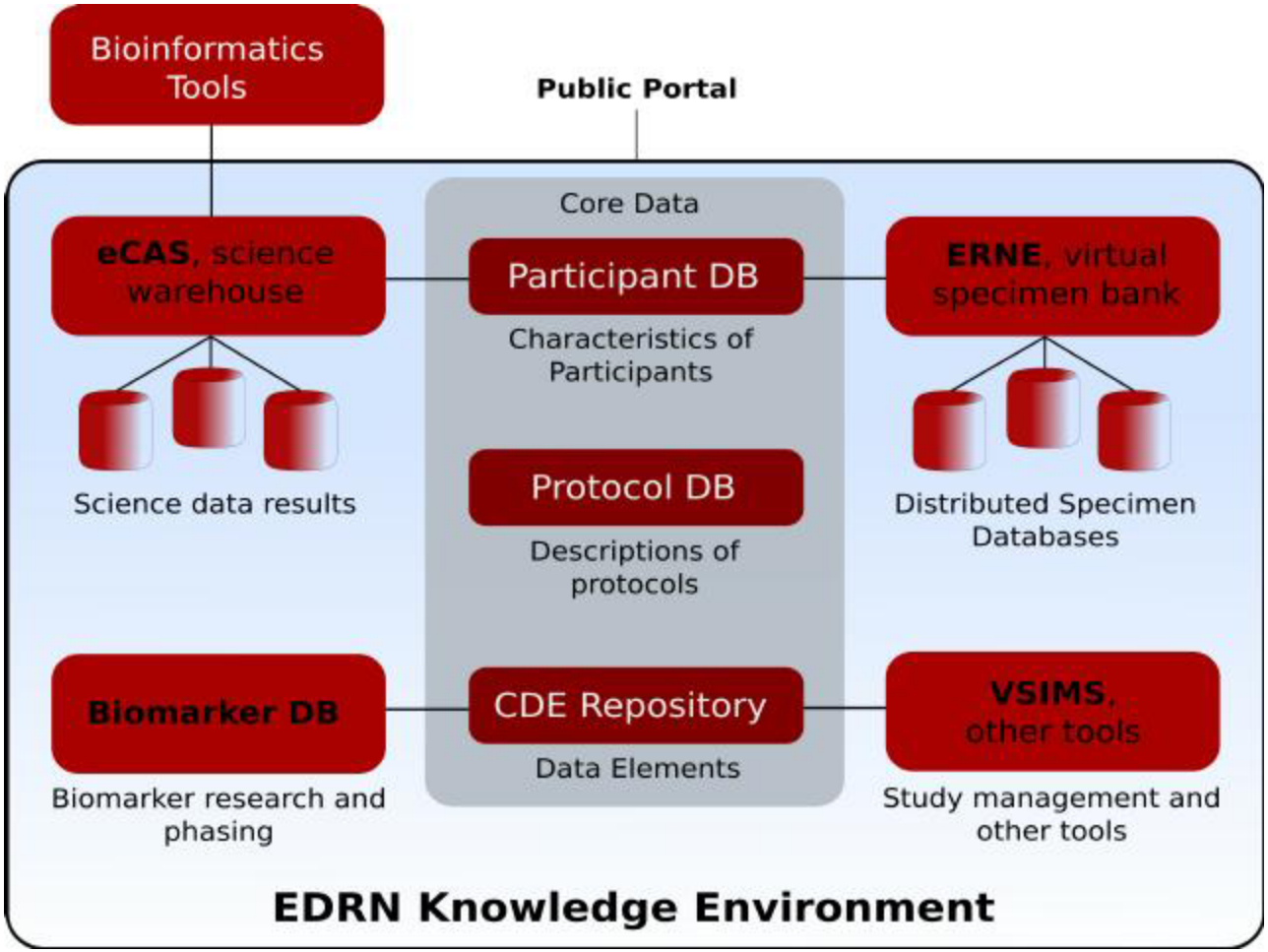
Next Steps

- **Add data models**
  - for data types ingested into ECAS
- **Model Code Sets**
  - ICD-10 cancer codes, organized by cancer site.
- **Governance process**
  - Ontology change procedure
- **Generate other RDFs for EKE**
- **Continue coordinating with subsystem and CDE development**

Early Detection Research Network

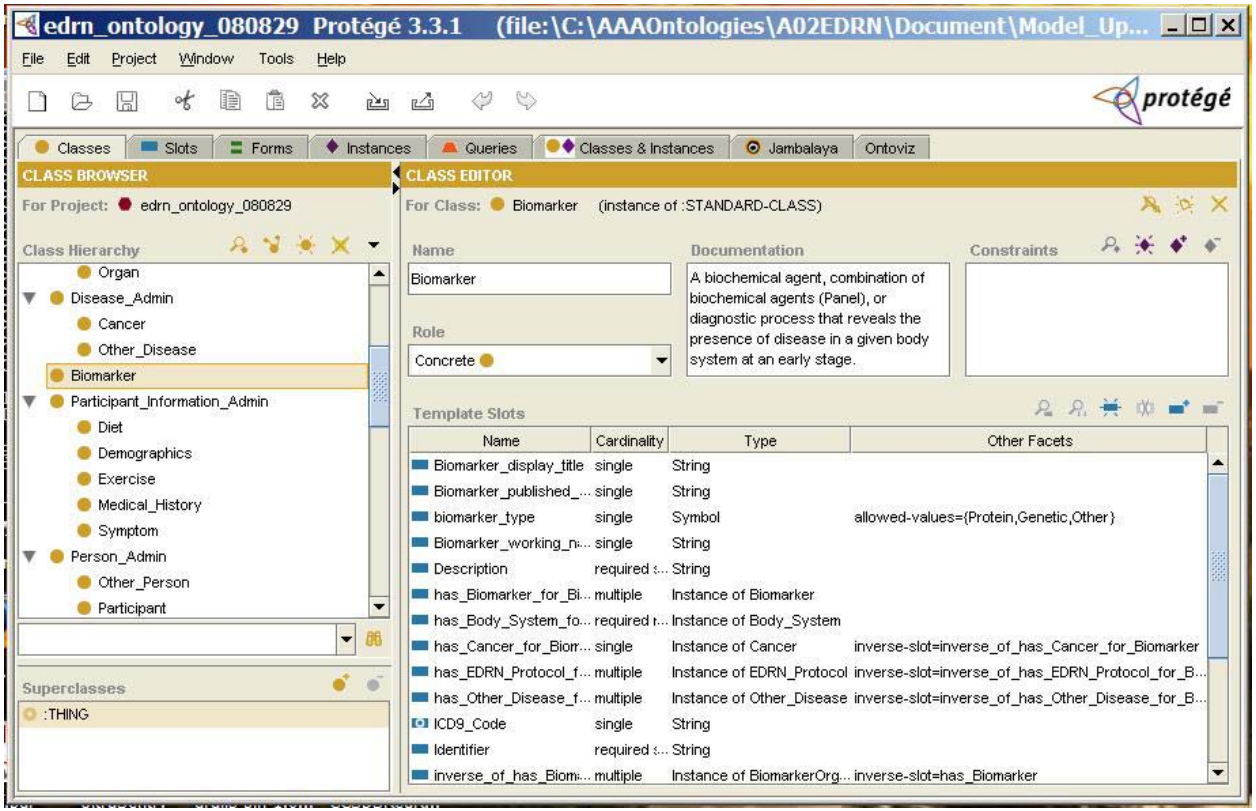
Backup

Context


Bioinformatics Tools
Public Portal
Core Data
eCAS, science warehouse
Participant DB
Characteristics of Participants
ERNE, virtual specimen bank
Science data results
Protocol DB
Descriptions of protocols
Distributed Specimen Databases
Biomarker DB
CDE Repository
Data Elements
VSIMS, other tools
Biomarker research and phasing
Study management and other tools
EDRN Knowledge Environment

Current Status

- **~ 40 classes**
  - E.g. Biomarker
- **~ 380 Attributes**
  - E.g. sensitivity
- Specification document generated



Early Detection Research Network

Example Data Standards Development and Maintenance Process >>PDS<<

- The "standards process" is the set of steps involved in modifying the PDS Standards Reference and, by implication, the tools, other software, and the data system which it governs.
  - Step 1. A Standards Change Request (SCR) is the vehicle by which standards changes are requested, refined, approved (or rejected), and implemented (if approved). An SCR may be submitted by almost anyone.
  - Step 2. The Standards Coordinator assigns the SCR an initial priority, then recruits a working group to refine the SCR and appoints one of its members as chair.
  - Step 3. The task of the working group is to refine the SCR so that it meets the goals of the originator while being consistent with the constraints of PDS.
  - Step 4. After discussion — which can include blog, e-mail, and telecon, and face-to-face components — the Tech Session takes one of four possible actions:
    - (a) approves the SCR and forwards it to Management Council for final approval
    - (b) approves a low-impact SCR for implementation after only Tech Session approval
    - (c) rejects the SCR and refers it back to the working group
    - (d) rejects the SCR outright
  - Step 5. The Management Council votes "yes" or "no" on SCR's. An SCR that is not approved by the Management Council is returned to the Tech Session for disposition. (step 4)
  - Step 6. SCR's approved by the Management Council are assigned to Engineering for implementation.